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ABSTRACT

The history of the present allocation model of a Dutch university is evaluated. This model was widely accepted at the start. As budget decreases continued, the model was increasingly criticized. At present it is no longer accepted as an instrument for policy decisions. The details of the model itself have become issues of political interest and discussion. The need is stressed for timely adjustment of allocation models, and the circumstances that influence the lifespan of such models are analyzed. Implications for financial planning and budgeting are also discussed. Contains 11 references. (Author/KM)

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THE RISE AND FALL OF AN ALLOCATION MODEL:
an evaluation of its role as an instrument for policy decisions

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This paper was presented at the Twenty-Ninth Annual Forum of the Association for Institutional Research held at the Omni Inner Harbor Hotel and the Lord Baltimore Hotel, Baltimore, Maryland, April 30 - May 3, 1989. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum Papers.

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THE RISE AND FALL OF AN ALLOCATION MODEL:
an evaluation of its role as an instrument for policy decisions

Abstract
The paper evaluates the history of the present allocation model of a Dutch university. This model was widely accepted at the start. As the decrease of budgets continued, the model was more and more critisized. At this moment it is no longer accepted as an instrument for policy decisions. The details of the model itself have become issues of political interest and discussion. The paper stresses the need for timely adjustment of allocation models and analyses the circumstances which influence the lifespan of such models. Some general conclusions and implications for financial planning and budgetting will be drawn.

1. Introduction

In the process of fund allocation different aspects can be distinguished. An allocation model - if used at all - is only one of these elements. Brons (1989) distinguishes the following elements:

- the relationships between the partners in the funding process;
- a set of agreements about how to decide on policy, cost-determination and allocation;
- a history of policy, cost-determination and allocation;
- an allocation model;
- resources outside the allocation model;
- a set of rules on authorization, accounting and auditing.

The aforementioned paper deals with the relationships between funding agencies - and in particular the government, being the main supplier of funds for research and education in The Netherlands - and institutions of higher education. In our view the given characterization also applies to the relationship between a central university administration (executive board and university council) and departments. This means that - even if an allocation model plays an important role in decisions about the allocation of funds - an evaluation of such a process cannot be complete without taking the other aspects into account. It is from this point of view that we will evaluate the role of the allocation model, currently being used in the University of Utrecht, as an instrument for budget allocation and policy decisions.

Within a university the allocation of budgets is decided at the central university level. Departments, however, are responsible for the development of educational and research programs. These two processes should be coherent. The vast literature on the use of allocation models, planning and decision making in institutions of higher education shows that this is by no means a simple problem. Although Hopkins and Massy (1981) have given a number of rules that modelers should follow in order to be successful, this is no garantee for success. One of the main reasons for this is that decision making in professional organizations like universities is a complex and difficult process. In this context we refer to the analysis of professional organizations by Mintzberg (1983) and the famous article

of Cohen, March and Olsen (1972), which describes universities as organized anarchies. As a consequence, university administration should always be aware of fierce obstruction when major changes are proposed.

An evaluation of the discussion within the University of Utrecht about a change of the current allocation model underlines this conclusion. In recent years, this model has played an important role in the process of budget allocation. At the start the model was widely accepted, mainly due to the way it was designed and implemented (Dijkman, 1985). But other circumstances also contributed to this wide acceptance, such as agreement between central university administration and departments about:

- the use of the model in the planning and budgeting process;
- the role of the various partners within this process;
- the fact that - within constraints - departments are free to budget their activities differently from the allocation model (budgets are allocated as lump sums).

Changing circumstances - internal and external - have now created a situation in which both the departments as well as the university council (see note 1) no longer accept the allocation model as an instrument for policy decisions and budget allocation. Several attempts have been made to adjust the model. None of these were successful. As a result the relation between the executive board, the university council and the departments have worsened.

After this introduction, we will in the next sections:

- review the financial situation of the system of higher education in the Netherlands over the last ten years;
- describe the process of budget allocation within our university;
- analyse the changing internal and external circumstances, which have led to the aforementioned situation;
- outline a possible way out of the present crisis;
- formulate some general conclusions.

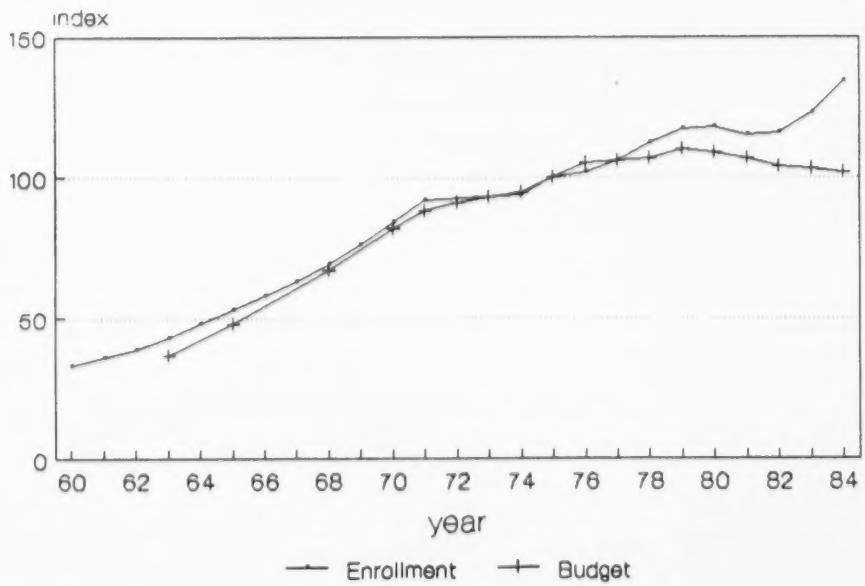
2. The financial situation of Dutch higher education

About ten years ago, the financial situation of the universities in the Netherlands changed drastically, when the government decided to freeze the total amount of money being spend on university education and research. This is illustrated by figure 1. During the sixties and the main part of the seventies, the budgets for the universities showed more or less the same growth as total student enrollment. After 1977/78 this was no longer true: while student enrollment still increased, the total budget for the universities started to decline. At the same time it was decided - in a joint venture between the ministry of education and research and the universities - to develop a new model for the allocation of budgets to the universities.
It was not until 1983 that the budgets of the universities were for the first time based upon this new model. Two of the main features of this model were:

- less dependence on student enrollment;
- to a large extend a student-independent financing of research.

Because enrollment was expected to decline, these features were considered to be a good long-term financial strategy.

Fig.1: Budget vs Enrollment:1960-1984
index 1975 = 100



from: Groot (1988)

Things, however, turned out to be different. Rising enrollment and graduation rates required more money, while - mainly due to the economic situation - the government decided several times to reduce university budgets even further. These budget reductions have been brought about in two ways:

- Almost every year one or more parameters in the model were changed in such a way, that the total outcome of the model did not exceed the total available amount of money. In most cases this led to more or less proportional cuts in the budgets of all universities.
- Two times the government decided to reduce university budgets in a non-proportional way. In the first operation (announced in 1982 and implemented during the years 1983-1987) specific fields of study were concentrated in one or two universities; this concerned both highly specialized curricula with very small enrollment (such as exotic languages) as well as larger ones (see for instance: Ligthart et. al.,1986; Van Rosmalen & Otten, 1986). The second operation (announced in 1986 and to be implemented during the years 1987-1991) was restricted to the reorganization of specific departments (medicine, arts and languages, social sciences) and a reduction of bureaucracy within universities (Brons, 1989).

These retrenchments have effected the financial situation of the universities in two ways:

- Total university funding declined steadily, whereas enrollment and graduation rates increased (see figure 2): in other words, more had to be done with less money.
- Every year the universities had to readjust their long term budget estimate. The reason for this is, that the allocation of university budgets was still based on the outcome of the allocation model introduced in 1983. Even though this model was adjusted almost every year, it remained a linear model. Consequently, the outcome of the model steadily increased, because the government had to readjust its estimates of enrollment figures almost every year. And each time some parameters in the model were changed in such a way to keep the total university budgets within the available amount of money. Figure 3 showes how this has led to several considerable readjustments of the long term estimates of university budgets.

Fig.2: Budget vs enrollment (1980-1993)
index 1980 = 100

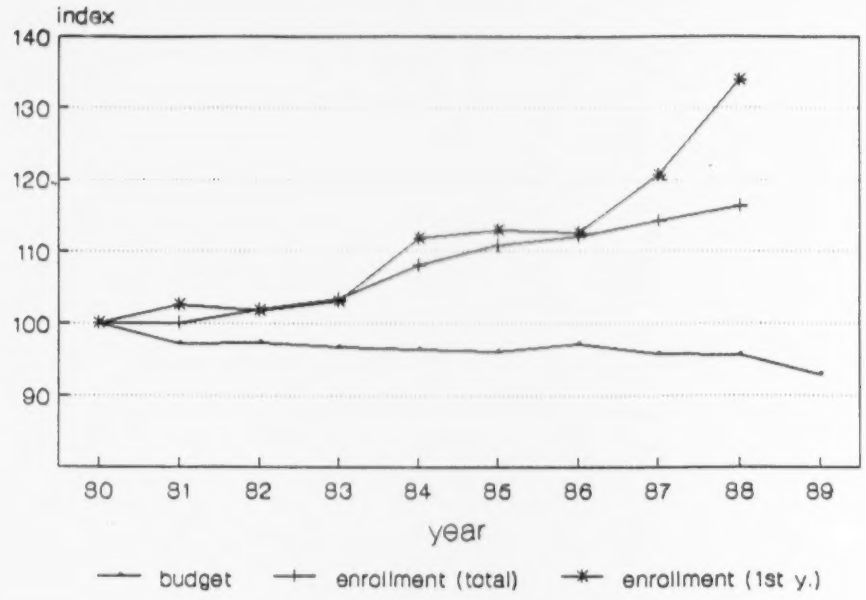
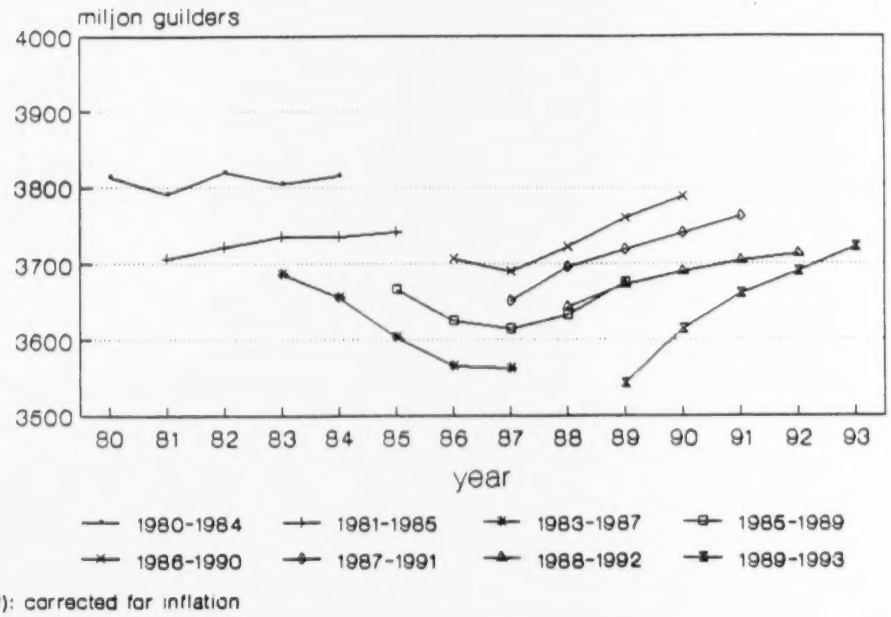


Fig 3: Estimated university budgets (#)
1980-1993



(#): corrected for inflation

3. The allocation of budgets within the University of Utrecht

Both the introduction of a new allocation model at the national level and the decline of budgets led to the introduction of an internal allocation model at our university. Also other government measures - often in one way or another related to retrenchment - have influenced the introduction of the model (see also Savenije and Otten, 1986):

- The restructuring of the curricula from the existing five or six years into a four-year curriculum; an important objective of this change was to increase the program output.
- The aforementioned concentration of specific fields in one or two universities.
- New budgeting procedures by the ministry of education and research in order to allocate research funds to universities on the basis of the volume of submitted research programs of acclaimed and externally reviewed quality.
- New regulations for the structure of academic staff; this meant, for instance, a drastic reduction of the numbers of full and associate professors.

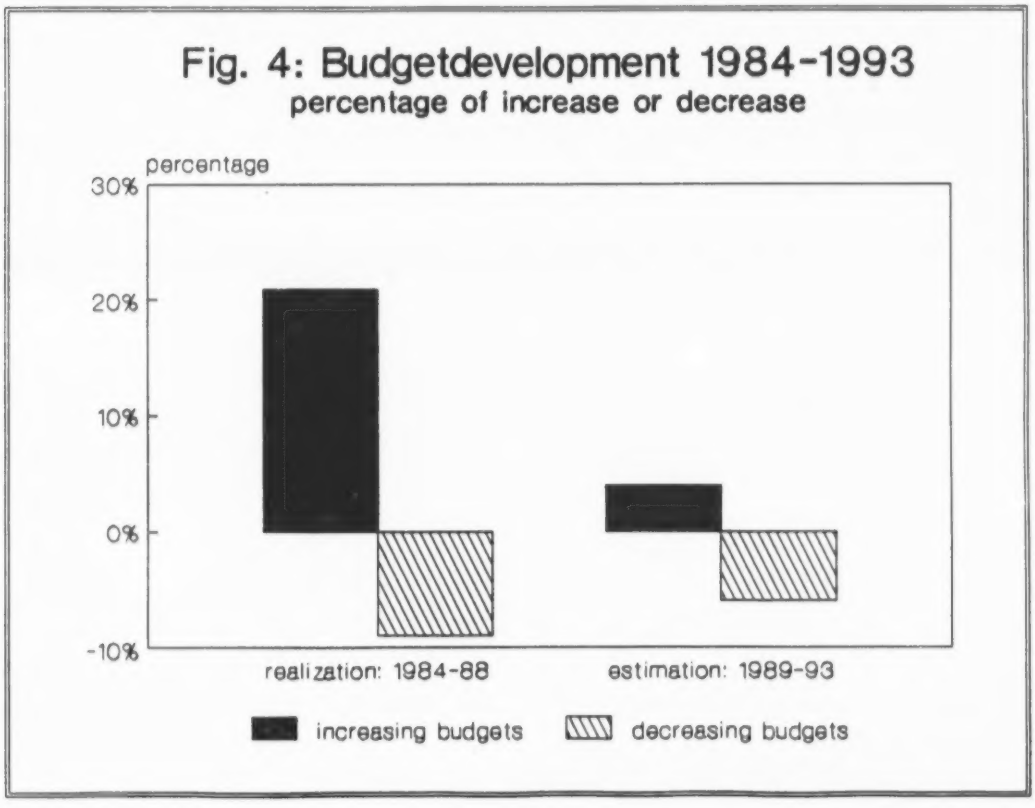
The implementation of these measures effected of course the allocation of budgets to departments. The old budgeting procedures were mainly enrollment-driven and could no longer be used. So, a new allocation model for teaching and non teaching staff was developed (for a review of the development and implementation of this model we refer to Dijkman, 1985).

But as important as the introduction of this new model were the changes in the whole process of planning and budget allocation:

- It was decided to draw up every year (later every two years) a five-year-plan, dealing with the research and educational policy of the university (this plan is called the development plan).
- The development plan also contains the so-called internal financial scheme. In this scheme the allocation of budgets for the next five years is outlined.
- The actual allocation of budgets for the first year of the next five-year-period is to a large extend based upon the financial figures for that year in the internal financial scheme.

- The outcome of the allocation model is only calculated for the last year of the five-year-period. So, there is no one-to-one relation between the outcome of the model and the actual budget allocation. Other considerations also play an important role, such as: last year's budget; the difference between last year's budget and the outcome of the allocation model for the last year of the five-year-period; the total available budget for the university; specific considerations as to how fast budget adjustments can be implemented.

The implementation of the aforementioned measures and the introduction of the new allocation model have effected the allocation of budgets in a non-proportional way. This is illustrated by figure 4. In this figure we have made a distinction between departments with increasing budgets and departments with decreasing budgets.



4. Changing circumstances: what went wrong?

In this paragraph we will discuss the major circumstances, which have led to a situation, in which the currently used allocation model of the University of Utrecht is no longer accepted as an instrument of budget allocation and planning:

1. Due to the constant reduction of the university budget the outcomes of the internal allocation model were no longer in agreement with this budget. This effects the credibility of the model. There have been several discussions about how to adjust the model.
2. Due to the reduction of budgets many departments experienced great difficulties in providing the necessary means and conditions for innovation. This has motivated the university administration to stimulate the innovation of academic programs by creating incentives by means of so-called revolving funds to provide temporary financial support for innovative developments. A recent evaluation within our university indicates that revolving funds are not always the best means for stimulating innovative activities (Savenije & Van Rosmalen, 1988). This raises the question how financial incentives can best be incorporated in the process of budget allocation.
3. As we have described in the previous paragraph, the universities in the Netherlands have had to implement several government measures directly related to research and education. Opinions within the university differ as to how these measures have effected the quality of research and education. One effect, however, seems unquestionable: it has certainly led to an improvement of the administrative and managerial strength at the departemental level. As a consequence the relationships between the central university administration and departments have changed in an irreversible way. Departments not only demand more freedom and autonomy, but they also want more influence on university policy and as far as they are concerned this also applies to the process of budget allocation. As several departments have put it: " We want our fair share of the total university budget".

These circumstances have led to an almost continuous discussion about how to change the allocation model. The executive board of the

university published two proposals, the first in october 1987, the second in october 1988. Also, in may 1988, the university council carried a motion in trying to find a way out of the discussion. All these proposals could not count on enough support within the university community. In fact, every proposal led to fierce discussions about the allocation model. This model may be characterized as highly normative, leading to lump sums to be allocated to departments. Calculating the outcomes of the model leads to many interim results, such as teaching load, number of fulltime-equivalent academic staff, number of non-academic staff and so on. In the end, all these results are put together into one lump sum, with as few constraints on actual spending as possible. However, all the interim results started to lead a life on their own and departments compared these results with reality, what they thought the reults ought to be or with the situation of departments at other universities. This led to endless technical discussions, ad-hoc coalitions and very often completely contradictory claims. In the end the discussion was mainly focused on the details of the model and was diverted from the real issue: can departments keep up the output and quality of their programs with the allocated budget. We will iilustrate this with some examples.

1. A main objective of the introduction of the new allocation model some years ago was to make the financing of research student-independent (Savenije & Otten, 1986). This led to an allocation of research funds to departments on the basis of the volume of submitted research programs of acclaimed and externally reviewed quality. This has resulted in large differences between departments with respect to the relative volume of their research activities, ranging from 40 to 80% with an average of about 60%. Several departments with a relatively small research volume now claim a larger share of the total university research budget. At the same time, some of the other departments stress that the relative sizes of research and educational budgets can be no argument for adjusting the allocation of research budgets; only quality should. Moreover they like to point out that changing the allocation of the university research budget - for reasons not based on quality considerations - will endanger their capability

of attracting grants from university grant committees and contract research. Both reasonings can never be applied at the same time, because it would for almost every department lead to a larger share of the total university research budget.

2. The departments of arts and humanities claimed that almost every parameter in the model was 'too low', for instance the parameter relating the number of academic staff to the number of non-academic staff. When confronted with the fact that the internal parameter for calculating the number for non-academic staff was about twice as large as the parameter being used in the model of the ministry of education, they just changed the argument and said that departments at other universities were much better of.
   On the other hand the natural and medical science departments claimed that the internal model did not lead to the same number of non-academic staff related to the number of academic staff financed by university grant committees if compared with the model used by the ministry of education.
   So again, almost every department claimed a larger budget.
3. A third example is the way funds for computer time at the university computer centre were allocated, when it was decided that this centre would have to earn about half of its budget by sending departments a bill; the budget of this centre was therefore reduced by 50% and this money was allocated to the departments. Again there were totally contradictory opinions how this allocation should be worked out. Departments which had used in the past hardly any computer time objected to the proposal that budget increases would be partly based upon the amount of computer time used in the past. They wanted a larger increase, because things would be very different in the future than in the past. On the other hand, departments with a large consumption of computer time in the past also claimed a larger budget increase, because the methods being used to predict the future use of computer time led to too low estimates. And again there was no way to satisfy everybody.

5. A new approach

What can be done to avoid or overcome a situation as described in the previous paragraph?

Solutions adopted by many universities in the Netherlands show that there is a tendency to make allocation models less detailed and complex and to base the allocation of budgets on more global and simple principles. Other main features are: financing of output instead of input and throughput; an even more distinct financing of research and education; more market orientation (Acherman & Brons, ed., 1989).

We do not disagree with solutions showing some of these elements; on the contrary. But we also think that it is not enough, because most solutions focus to much on changing the allocation model only. In the introductory paragraph of this paper we have stated that the allocation model is only one of the elements in the process of budget allocation. The other elements should also be taken into account. For instance, changes in the budgeting procedures must reflect the increased autonomy at the departemental level. Also should it strengthen the innovational capacity of departements. In the remainder of this paragraph we describe the attempt, which was undertaken at the University of Utrecht.

First of all we would like to mention the start of the project RUU 2001 (see note 2). This project must lead to a strategic plan for the future of the university and covers most policy issues: education, research, services, human resources, finance, facilities, housing, enrollment, alumni, external relations. Some of the results sofar, relevant to the subject of this paper, are:

1. The selection of a restricted number of research groups, whose research is of excellent quality by international standards. The aim is that by taking appropriate measures these groups will contribute to the research profile of the university.
2. All departments are invited to develop a special program for a restricted number of very good students. The aim is that the quality of this program will first attract highly motivated students from all over Holland and in a later stage also from other countries.

3. Several committees have advised the executive board on the future policy of the university with respect to human resources, finance, facilities and housing, external relations.

A second project is aimed at changing the way the university is being managed, both at the central university level as well as at the departemental level. The key words of this project are: decentralization - autonomy - accountibility.
Although this project is not concerned with the research and educational policy of the university as such, one of the aims is to change some of the elements of the process of budget allocation as mentioned in the introduction of this paper. More autonomy at the departemental level will no doubt change the relations between the executive board, the university council and the departments. Decentralization can only succeed if the rules on authorization, accountibility and auditing are adjusted. Many departments have made perfectly clear that they will meausure the success of the project also by the way it will effect the rules on how to decide on policy and budget allocation.

It is hoped for that both projects will contribute to solving the present crisis with respect to the budgeting process. The first project (RUU 2001) must give an answer to the question <u>which</u> elements from the research and educational policy of the university can influence the allocation of budgets. The second project must answer the question <u>how</u> the rules and procedures in the budgeting process should be adjusted.
Both answers are necessary, but not sufficient. Therefore, the executive board has recently published a policy paper on the internal financial scheme for the years 1990-1994 in which the interim results of the two projects are integrated and translated into real figures about the allocation of budgets.
It would be outside the scope of this paper to go into the details of the financial scheme for the years 1990-1994. We will describe, however, in general terms how this approach has been worked out.

In the financial scheme for the years 1990-1994 two main factors determine the budget of a department:

- The way the department contributes to the total budget of the university. By improving the quality and/or output of their activities departments can influence the total budget of the university. Consequently, the allocation of budgets should take this 'earning capacity' into account.
- Deviations from the 'earning capacity' must be directly related to the research and educational policy as stated in the development plan of the university.

In an approach like this the roles of the partners in the budgeting process should be clearly defined. Also, all participants should have a real chance of influencing the outcome of the decision making process. To achieve this the whole process must be well structured. This has been done in the following way.

Firstly, the executive board makes a proposal; it should be clear why the budgets are as proposed.
If a department does not agree with the proposed budget, they must explain why they disagree. For the discussion to be fruitful, deparments have the right to know which arguments can be used if they want to convince the executive board. For instance, these arguments could be related to the output and quality of their programs, their contribution to the policy of the university or the strategic position of a department in relation to other departments. It also requires an agreement on how output and quality are measured and how the activities of a department influence the university budget. The latter may seem to be technical aspects; however, differences of opinion on these issues can easily frustate the whole process of negotiations and decision making.

Another important point on the agenda should be that departments can adress the executive board on their responsibilities, such as the care for optimum infrastructural facilities, real deregulation and decentralization, effective rules and procedures for authorization, control, accountability and auditing. The reason for this is that these issues also determine the possibilities for a department to improve the output and quality of its programs and to contribute to the university policy.

After these negotiations, the things which have been agreed upon should be embodied in a formal contract.

Of course in the end a final decision about the allocation of budgets must be made, either by the executive board or - as is the case in The Netherlands - by the university council. There will never be a garantee for an overall consensus on this final decision. We do think, however, that the changes we have described in this paragraph can eliminate some of the shortcomings which have frustated the discussions on budget allocation within our university for too long.

6. Conclusions

Allocation models are often introduced as a policy instrument in the process of budget allocation when budget cuts are inevitable. Experience in many institutions of higher education indicates that such models can indeed be very useful.
Retrenchment is very often related to specific measures with respect to education and research. The way these measures are implemented can have a great influence on (changes in) the structure of the allocation model.
Once a certain measure is implemented, there is often no more need to use the part of the model associated with this particular measure. In other words, the allocation model can become less detailed and complex and the allocation of funds can be based upon more global and simple principles.
As we have illustrated in paragraph 4, without such changes the danger becomes real that the very details of the model itself become principal issues of political interest and discussion. The experiences at our university show that the way out of such a situation can be very difficult and time-consuming.

To overcome or avoid such a situation it is necessary to adopt a new approach. To ensure that the discussion is not once more diverted from the real issues - these being the relation between research and educational policy of the university and the allocation of budgets - more elements than just the allocation model must be taken into account.

First of all, it should be clear:

- what the main policy issues and choices are;
- what the relation is between research and educational policy and the allocation of budgets;
- which rules and procedures determine the budgeting process.

All participants must have a real opportunity of changing the outcome of the budgeting proces. Therefore, it is necessary that proposals put forward by the executive board are not final and that departments know which arguments can be used in the negotiations. If possible, these negotiations should lead to explicitely formulated agreements, stating what can be expected from all participants over the next period of time.

We believe that if the above is taken into account in (a process of changing) budgeting procedures, the university as a whole will maintain its capability to adjust to new internal and external circumstances. Also will it be possible for an allocation model and budgeting procedures to maintain their roles as effective instruments for policy decisions.

Notes

1. The university council of a Dutch university has the power to draw up the budgetbook of the university and consequently how the total university budget will be allocated.
   The 30 members of the council are choosen on a one-person-one-vote basis by all the employees and students within the university; 10 members are choosen by the academic staff, 10 by the non-academic staff an 10 by the students.
2. The characters RUU are - in Dutch - the acronym for University of Utrecht.

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